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**Patent and Trademark Office**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/350,989 07/12/99 BETORI

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MM91/0727

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EXAMINER

GRAYBILL, D

ART UNIT

PAPER NUMBER

2814

DATE MAILED: 07/27/01

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

**Office Action Summary**

Application No.

09/350,989

Applicant(s)

BETORI, FRANCESCO

Examiner

David E Graybill

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 May 2001.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4 and 6-20 is/are pending in the application.
- 4a) Of the above claim(s) 2,4,6 and 12-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,7-11 and 15-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 05 January 2001 is: a) ☒ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 10.                      6) ☐ Other:

Applicant's election with traverse of the species wherein the pads are arranged along a central line on a side of the die and the pins are attached to the edges of the same side and the pins are obtained by cutting a continuous strip support, claims 1, 3, 7-11 and 15-20, in Paper No. 13 is acknowledged. The traversal is on the grounds that there is no serious examination burden and no reasons have been given as to why the species should not be examined together. These reasons are not found persuasive because the reasons for insisting upon restriction as stated in MPEP 808 have been clearly met.

The requirement is still deemed proper and is therefore made FINAL.

The amendments to the claims filed 1-5-01 and 5-14-01 are non-responsive to the Office action filed 7-5-00 because they fail to conform to the provisions of MPEP 714.03:

714.03 Amendments Not Fully Responsive - Action To Be Taken:

Where a bona fide response to an examiner's action is filed before the expiration of a permissible period, but through an apparent oversight or inadvertence some point necessary to a complete response has been omitted - such as an amendment or argument as to one or two of several claims involved or signature to the amendment - the examiner, as soon as he or she notes the omission, should require the applicant to complete his or her response within a specified time limit (usually one month) if the period for response has already expired or insufficient time is left to take action before the expiration of the period. If this is done the application should not be held abandoned even though the prescribed period has expired.

Specifically, in claims 8 and 16, the rejection directed to the term "all four side edges of the die" has not been addressed.

Because the response appears to be bona fide, but through an apparent oversight or inadvertence the response is incomplete, and in order to continue to afford applicant the benefit of compact prosecution, the requirement to complete the response within a one month time limit is waived, the amendment is entered, and the claims are examined on the merits.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 3, 7-11 and 15-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The following lack sufficient literal antecedent basis:

Claim 1, "the printed circuit board on which said electronic device is mounted";

Claims 8 and 16, "all four side edges of the die";

Claim 18, "all flanks of the die."

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --  
(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 7-10 and 17-20 are rejected under 35 U.S.C. 102(a) as anticipated by Sato (5519251) or, in the alternative, under 35 U.S.C. 103(a) as obvious over the combination of Sato (5519251) and applicant's admitted prior art.

At column 4, line 14 to column 11, line 8, Sato teaches an electrically tested electronic device, free from infantile mortality, for direct mounting on a printed circuit board, wherein said electronic device comprises a silicon die 11 having a top surface and a bottom surface, in which an integrated circuit is realized externally accessible through a plurality of

connection pads 13 and an array of connection pins 14 which are mechanically and removably connected to the die by connection means 21 for removable attachment of said pins, and are electrically connected to the connection pads of the die by electric connection means 15, said electronic device being partially packaged in a resin, wherein each of said connection pins includes a pre-formed portion 16-1 which is not encapsulated in said resin, in order to accommodate the thermal expansion difference between the silicon die and the printed circuit board 48 on which said electronic device is mounted; the pads are arranged along a central line on a side of the die and the pins are attached to the edges of the same side of the die; the pins are obtained by cutting a continuous strip support 27 on which the dies are mounted, wherein the connection pins are distributed on all four side edges of the die, and the electronic device is partially packaged in a resin so as to comprise a semi-package 31 that covers a first surface of the die where the connection pads are arranged together with their connections to the pins made by welded bonding wires ("wire-bonding"), as well as all flanks of the die, leaving an opposite second surface of the die exposed, the electric connection means between the connection pins and the connection pads are made by welded thin bonding wires ("wire-bonded"), the device is

partially packaged in a resin so as to comprise a semi-package, that covers a first surface of the die where the connection pads are arranged together with the connection means between the connection pins and the connection pads, as well as all flanks of the die, leaving an opposite, second surface of the die exposed, the pre-formed portion not encapsulated by resin is a portion of a bent metal pin, and the connection means for removable attachment of the pins is a glue.

To further clarify the teaching "for direct mounting on a printed circuit board," this statement of intended use does not structurally limit the product of the applied prior art, and the product of the applied prior art is inherently capable of being used for the claimed intended use.

To further clarify the teaching, "removably connected," this limitation is inherent in the product of Sato because the pins of Sato are capable of being removed.

To further clarify the teaching "for removable attachment of said pins," this statement of intended use does not structurally limit the product of the applied prior art, and the product of the applied prior art is inherently capable of being used for the claimed intended use.

To further clarify the teaching, "electrically tested electronic device, free from infantile mortality," this

preambular limitation is a product by process limitation, and the product of Sato appears to be identical to the product of the instant product by process claim.

In the alternative, in the specification at page 2, line 16 to page 4, line 37, applicant admits as prior art an electrically tested electronic device, free from infantile mortality. In addition, it would have been obvious to combine applicant's admitted prior art product with the product of Sato because it would facilitate product reliability.

Claims 11, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato, and the combination of Sato and applicant's admitted prior art as applied to claims 1, 3, 7-10 and 17-20, and further in combination with McShane (5311057).

Sato does not appear to explicitly teach that the connection means for removable attachment of the pins to the die is a double-sided adhesive tape. Nevertheless, at column 3, lines 37-57; column 5, lines 28-35; and column 7, lines 3-41, McShane teaches a double-sided adhesive tape connection means 20 for removable attachment of pins 18 to a die 12. Moreover, it would have been obvious to combine the product of McShane with the product of Sato because it would provide a connection means.

Also, Sato does not appear to explicitly teach that the device includes a three or more point, conductive bar aimed at



distributing an electric ground potential or power supply to three or more points of the die.

Nevertheless, as cited, McShane teaches a three point conductive bar ("three conductive layers") aimed at distributing electric ground and power supply to points of the die. Although the applied prior art does not appear to explicitly teach the limitation, "aimed at distributing the electric ground potential or power supply to three or more points of the die," this statement of intended use does not structurally limit the product of the applied prior art, and the product of the applied prior art is inherently capable of being used for the claimed intended use.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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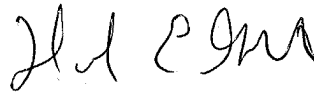
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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

***Any telephone inquiry of a general nature or relating to the status (MPEP 203.08) of this application or proceeding should be directed to the group receptionist whose telephone number is 703-308-1782.***

Any telephone inquiry concerning this communication or earlier communications from the examiner should be directed to David E. Graybill at (703) 308-2947. Regular office hours: Monday through Friday, 8:30 a.m. to 6:00 p.m.

The fax phone number for group 2800 is 703/305-3431.



David E. Graybill  
Primary Examiner  
Art Unit 2814

D.G.

26-Jul-01